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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,463	06/27/2003	James W. Ryan	JR-10,003-US	6428

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EXAMINER	
SLOBODYANSKY, ELIZABETH	
ART UNIT	**PAPER NUMBER**
1652	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/608,463	RYAN, JAMES W.	
	Examiner	Art Unit	
	Elizabeth Slobodyansky, PhD	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7,10,12,14-18,20,22-25 and 30-38* is/are pending in the application.

4a) Of the above claim(s) *12,14,22,23 and 32-38* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7,10,15-18,20,24,25,30 and 31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 25, 2007 has been entered.

The amendment filed January 25, 2007 amending claims 7, 20, 24, 25 and 31, canceling claims 8 and 26-28 and adding claims 33-38 has been entered.

Claims 7, 10, 12, 14-18, 20, 22-25 and 30-38 are pending. Claims 12, 14, 22, 23 and 32 have been previously withdrawn.

Claims 7, 10, 15-18, 20, 24, 25, 30 and 31 are under consideration.

Election/Restrictions

Newly submitted claims 33-37 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

While claim 7 and claims 33-37 are related as product and process of use, these claims are drawn to distinct inventions as explained in the Office actions mailed May 6, 2004 and May 25, 2005.

Inventions of claim 7 and claim 38 are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1)

that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the nucleic acid molecule of claim 7 can be obtained by hybridization from a natural source, for example.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 33-38 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7, 10, 15-18, 20, 24, 25, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muzny et al. in view of Vogelstein et al.

Muzny et al. (GenBank accession AC025423, March 9, 2000, cited on form PTO-892 mailed 12/1/04) teach the sequence of human chromosome 12 comprising the

sequence of SEQ ID NO:4. Said sequence is of at least 20 nucleotides and is a contiguous exon-intron or intron-exon region of SEQ ID NO:4.

Vogelstein et al. (US Patent 5,411,860, GenBank accession NM_002392, cited on form PTO-892 mailed 12/1/04) teach cloning, functional expression and chromosomal localization of human mouse double minute (MDM2) homolog. They teach cDNA (SEQ ID NO:1) encoding human MDM2 homolog (SEQ ID NO:2) that is 100% identical to the human MDM2 homolog of the instant invention (SEQ ID NO:2). Using a labeled probe, they localized the gene encoding said human MDM2 homolog to chromosome 12q12-14 (column 5, lines 2-13; the description of SEQ ID NO:1 in the Sequence Listing). SEQ ID NO:1 comprises 5' non-coding region consisting of nucleotides 1-296. The elected species of 41739-41738 correspond to exon-intron junction within the genomic DNA corresponding to said 5' non-coding region.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use said cDNA to identify the genomic DNA that encodes the human MDM2 homolog of SEQ ID NO:2 on chromosome 12q12-14. The motivation is provided by Vogelstein et al. who teach that it binds to oncogene p53 and is diagnostic of tumorogenesis. The state of the art provides various techniques for obtaining genomic DNA using cDNA probes that are usually labeled. The comparison of genomic and cDNA would result in the identification of regions comprising exon-intron and intron-exon junctions within coding and non-coding regions. One of ordinary skill in the art would have been motivated to use said non-coding regions or fragments thereof of at least 20 nucleotides and up to 5000 or 51039 nucleotides (the entire length of SEQ ID

NO:4) nucleotides for detecting splice variants of chromosome 12q12-14 from genomic nucleotide samples from an individual, for example. As a matter of convenience a non-coding region such as an exon-intron or intron-exon region or fragments thereof can be present in a kit or on a solid support. Further, said support can be a microarray according to a customary use of nucleic acid molecules in the art.

Response to Arguments

Applicant's arguments filed January 25, 2007 have been fully considered but they are not persuasive.

With regard to the 103(a) rejection, Applicant argues that "There was certainly no indication given in the cited art either singly or in combination regarding the location of the MDM2 gene encoding human mouse double minute 2 homolog depicted in SEQ ID NO:2 on AC025423" (Remarks, page 13). As was explained in the previous Office action mailed August 25, 2006 "the exact location of the gene is not necessary as long as its sequence is known as in the instant case" (page 5). At the time the invention was made finding non-coding regions using cDNA and genomic DNA was standard technique. Watson et al (1992) "Recombinant DNA" teach that "once the first genes were cloned, introns were identified by comparing the cloned genomic DNA with the corresponding cloned cDNA" (page 137, 2nd column). In the case of the instant application, both genomic and cDNA were known. They only needed to be compared in order to identify intron-exon junctions. Applicant further argues that "There is no prior art that defines the complete genomic structure of a particular gene. This is necessary in

order to identify the claimed noncoding sequences in the instant invention" (page 13). This argument is similar to the issue of location and is responded above. Applicants further argues that "One of ordinary skill in the art would have no idea as to the number of introns and the length of the 5' and 3' noncoding sequences in the MDM2 gene" (page 14). It is agreed that said number and length were not known before the invention. If they were known, the rejection would be 102. The current rejection is 103(a) stating that it would have been obvious to compare genomic DNA and cDNA and identify the number of introns and the length of the 5' and 3' noncoding sequences in the MDM2 gene. Applicant further argues "The Examiner's assertion that one of ordinary skill in the art would have expected that the location is often imprecise actually further supports Applicant's assertion the claimed sequences were indeed nonobvious. If the location is imprecise, where would one of ordinary skill in the art know where to look?" (page 15). This is not persuasive because the precise location is not necessary when the 2 sequences that need to be compared are known. They would be obvious because the genomic DNA was already sequenced and cDNA was made. Applicant further argues that "It should be noted that annotation of the human genomic DNA was still relatively new as of the priority date of the instant application. Even assuming *arguendo* that finding noncoding regions using cDNA and genomic DNA was standard technique, the means to make the invention does not predict the claimed invention. Specifically the means used to make the invention do not predict the claimed nucleic acid molecules. BLASTN, TBLASTN, etc. do not themselves predict gene-specific results. It is Applicant's view that only general guidance is provided. This is not

sufficient" (page 16). This is not persuasive because there is no need to predict the sequence itself, it was known before. The invention is in the identification of the specific fragments (exons/introns) of the known sequence. Applicant appears to argue as if the genomic DNA was not sequenced prior to the instant invention. Applicant further argues that "it is Applicant's view that given that the cDNA constitutes just 1.6% of the AC025423 sequence is in itself evidence of the unpredictability of determining the entire sequence of the MDM2 gene and thus contiguous intron-exon and exon-intron regions. The Examiner is in effect asserting that just because Applicant did isolate the claimed nucleic acid molecule, it must have been obvious to do so. It is well established case law that the fact that the inventors were ultimately successful is irrelevant to whether one of ordinary skill in the art at the time the invention was made would have reasonably expected success" (paragraph bridging pages 16-17). This is not persuasive because the size of the cDNA does not matter. ESTs of smaller size are used for comparison to genomic sequences. Applicant does not show what unexpected difficulties other than routine comparison of the genomic DNA and cDNA were encountered during the time the invention was made.

The objection to claim 7, with dependent claims 10, 15-18, 20, 30, 31, is withdrawn in view of Applicant's argument that this is a species election (Remarks, page 12).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Watson et al. "Recombinant DNA" (1992). Published by Scientific American Books, 2nd edition, NY, USA, pages 137-138.

This is a RCE of applicant's earlier Application No. 10/608,463. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Slobodyansky, PhD whose telephone number is 571-272-0941. The examiner can normally be reached on M-F 10:00 - 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy, PhD can be reached on 571-272-0928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

E. Slobodyansky

Elizabeth Slobodyansky, PhD
Primary Examiner
Art Unit 1652

April 12, 2007